REMARKS

ON

UERPERAL FEVER

BEFORE THE

NEW YORK ACADEMY OF MEDICINE,

OCTOBER 6, 1858.

BY

DR. FORDYCE BARKER

AND

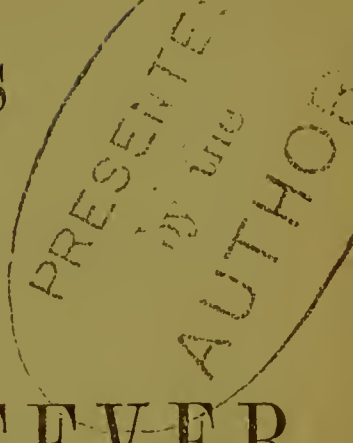
DR. A. K. GARDNER.

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REMARKS

ON

PUERPERAL FEVER

BEFORE THE

NEW YORK ACADEMY OF MEDICINE, OCTOBER 7, 1857.

BY

B. FORDYCE BARKER, M.D.,

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(Phonographically reported by Dr. GEO. F. SHRADY, of the New York Hospital.)

FROM THE AMERICAN MEDICAL MONTHLY FOR NOVEMBER, 1857.

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1857.

REMARKS BY DR. BARKER.

ıe regular meeting of this body was held October 7th, the Presi-
, Dr. Valentine Mott, in the Chair. A continuation of the dis-
on on Puerperal Fever having been made, by previous vote of the
lemy, the special order of this meeting, a large concourse of the
)ws was brought together.

'of. Barker, being called upon by the President to continue the
ssion, rose and said :

R. President : I should feel some hesitation in offering a few
rks on puerperal fever, after the subject has been discussed for
evenings, by gentlemen whose character, position, and experi-
carry with their expression of opinion the greatest weight and
)rity, were it not for the importance and difficulty of the subject,
pposite opinions which have been entertained by distinguished
itioners in regard to it, its liability to occur in the practice of
physician, and its terrible fatality. It is a disease which can-
)e investigated by the study of a few sporadic cases, or of a
epidemic, or of different epidemics in the same locality.
er is it a disease to be studied in the dead-house, for valuable
: the researches which have been made into the minute anat-
)f this affection, important as it is, for the complete elucidation
: subject, that everything should be known as to the autopsic
s which are to be found ; yet their variety in different epidem-
e absence of everything like constancy or uniformity in these
sic lesions, the frequent want of everything like correspondence
en the severity of the symptoms during life, and the amount of
)rbid appearances found after death, prove, as I think, that these
s should be regarded as results of the disease, but not as the

disease. And it seems to me that there is some danger of our giving undue prominence to these autopsic lesions. We might as well seek to find out the cause of the fire, in a minute chemical and microscopical examination of the ashes of a conflagration, as rely upon the appearances found after death, to determine the character of a disease which results from the absorption of a morbid poison. But is this such a disease? That is the grand question; and it can be answered correctly, not by studying the disease from one stand-point alone, but by a comprehensive examination of all that has been found out as to its phenomena and laws, in different epidemics and varied localities, as recorded by different observers. Naturally enough, the opinions, especially the scientific opinions of men, have for a basis what they have seen and observed for themselves, and such opinions justly carry with them the most weight. Hence, in puerperal fever, we have had the finest minds and the brightest geniuses in medicine, as exponents of exclusive, special, restrictive views as to its pathology and its therapeutics, their ideas resting entirely on the peculiar type of the disease which they have seen for themselves. The character of this disease, bringing death and desolation into those families which have just exulted in the joy and gladness of a new birth, the medium of infection being sometimes the physician, whose steps are regarded, and should ever prove as those of a ministering angel of comfort and hope; its sudden onslaught, its speedy results, and its terrible fatality, all have combined to bring out the highest talent, where talent has before lain dormant in the ordinary routine of practice, and has contributed to give us a richer literature on this subject, than is to be found of any other disease. This statement will surprise some whose attention has not been specially called to this subject, but I believe it will bear close scrutiny. In this day of progressive medicine, in our anxiety to bring it up to the perfection of a physical science, it is possible that in our search after what is new and original, we may overlook what is old and proven, and thus that erroneous deductions may be drawn from the limited experience and observation of a few, which would have been corrected, had advantage been taken of the enlarged experience of the many. We have greatly the advantage of our predecessors in studying this disease. With all the acumen, and careful observation, and extensive experience of Gordon, and Armstrong, and Collins, and Gooch, and Ferguson, they had but a limited knowledge of its pathology and therapeutics, compared with what we may have, who can bring together the aggregate results of all their labors, without assuming to place ourselves

the same intellectual level with them. What is puerperal fever? it a local phlegmasia? It was believed to be inflammation of the erus by Mauriceau, Astruc, Denman, and others—to be inflammaon of the omentum and intestines, by Hulme, Leake, and others. was regarded as peritonitis by Gordon, Hey, Armstrong, Mackinsh, and Collins—to be inflammation of the veins and lymphatics, by ance, Duplay, and others. Prof. Meigs, more comprehensive in his thology than the authors I have named, considers puerperal fever metritis, metrophlebitis, peritonitis, or ovaritis, or two or more these phlegmasiæ combined. He distinctly avows as the object of s work, "to prove that it is a simple state of inflammation in cerin tissues of pregnant women, and of women lately confined, and at the fever that attends it is a natural effect of intense constitunal irritation from the local disorders."

In the discussion before the Academy, I think I am not wrong in serting that we have had presented inferentially, if not directly, o entirely distinct, not to say opposite views, as to the essential aracter of this disease. Prof. Smith, in his very able and complete per on its causes and modes of propagation, very plainly announces s belief that it is an idiopathic fever. In the interesting and valble contributions to its morbid anatomy, made by my friend and lleague, Prof. Clark, although he has not definitely expressed his inion as to the pathology of the disease, yet I think the legitimate duction from what he has said must be, that it is a local phlegma. He says, "Puerperal fever has four principal lesions, and many a secondary character; inflammation of the peritoneum, inflammaon of the veins of the body of the uterus, inflammation of the inner rface of the uterus, or endo-metritis." He expresses his belief that, every case, one of these lesions will be found. He distinctly asserts at these lesions are inflammatory. He also states his conviction, that those cases described by Gooch, Locock, Simpson, and others, without lesion, were cases of pyæmia, and that the pyæmia has s source in the inflammation of the inner surface of the uterus, and e facility with which the uterine sinuses could convey the pus into e system was shown."

Without stopping at the present moment to discuss the question, ether pus, the product of simple ordinary inflammation, if absorbed washed into the circulating blood, will produce the symptoms hich we call pyæmia, or whether, in fact, another element besides udable pus is not essential for the production of these phenomena, is sufficient for my present purpose to remark that *inflammation* is

claimed distinctly to be the essential characteristic. In other subsequent remarks, Prof. Clark declares that "the *primary* lesions are in the organs of generation, the *secondary* are in the blood, and are found, indeed, in almost every organ of the body." It seems to me that this is equivalent to a distinct avowal of the doctrine of local phlegmasia. The whole question of contagion must turn upon this point, for if it can be established that puerperal fever is simply a local phlegmasia, modified only by the puerperal state, I think we shall be compelled to give up the doctrine of contagion. Besides, the pathology of the disease must form the basis on which to rest all intelligent discussion of its treatment. As preliminary to an expression of views in regard to the pathology of the disease now under consideration, I may remark, that important as is pathological anatomy, now so zealously cultivated, its prominence in the present age has resulted in some evils. It has led to exclusive *solidism* in medical doctrines, as is strikingly manifest in the opinions held by many in regard to other of the zymotic diseases, as typhus fever and cholera, as well as puerperal fever.

It seems to me a very important question to determine whether, in puerperal fever, the primary lesions are in the organs of generation, and the secondary are in the blood, or whether the order of phenomena is not reversed! This involves the whole question in discussion. It is only asking, in other terms, whether puerperal fever be a local phlegmasia or a zymotic disease. In as brief terms as may be consistent with clearness, I will assign my reasons for believing that puerperal fever is a zymotic disease, having an essentiality altogether distinct from inflammation of any tissue or structure of the body, even in a puerperal woman. Here I wish to remark that the puerperal state, *per se*, cannot alter, in any sense, the laws which govern inflammation. It may, and undoubtedly does increase, under certain circumstances, the susceptibility to inflammatory action, but it may, and often does, produce a condition of the system directly antagonistic to inflammation,—such a condition as must notably decrease the tendency to inflammation; and it is precisely in this latter condition that we find the most virulent, the most intractable forms of puerperal fever. What do we mean by the puerperal state? It can only mean the physiological and pathological organic changes induced by gestation, the organic changes produced by parturition, and the physiological changes which follow it. Now there are nothing in these changes which can essentially change the laws of inflammation, when we have inflammation alone. Occurring under

·se conditions, I think I shall subsequently show that it does not terially differ from inflammation occurring in the non-puerperal te. Now, in giving my reasons for believing that puerperal fever ; an essentiality, that it is something entirely distinct from local egmasiæ, it will be seen that I adopt a line of argument parallel h that followed by Dr. Stokes in his masterly lectures on typhus er.

First, then, *puerperal fever has no anatomical character.* That re are a great variety of structural lesions found, all will admit. e four principal lesions are, as Dr. Clark has said, those of the itoneum, of the veins of the body of the uterus, of the lymphat- of the inner surface of the uterus. And then we have lesions the pleura, of the lungs, and pus in the liver, in the muscles, in joints, and pus in the blood. But where we have a group of ıptoms so resembling each other that they are almost identical, do not have constant or uniform structural lesion. They are onstant in their seat and their amount. In the same epidemic we e the greatest possible variety in their seat and their amount. sion of the peritoneum may be present or absent,—so of the ute- , so of the lymphaties, and so of the veins. In those cases, which ander, Gooch, Locock, and Simpson, suppose to be cases of puer- al fever without lesion, conceding the correctness of Prof. Clark's w, that with a proper examination pus might have been found in veins of the uterus,—that they really were cases of pyæmia, what s this prove? In legal parlance, I should put in a demurrer. mit the fact, will any one claim that all cases of puerperal fever cases of pyæmia, and that inflammation of the inner surface of uterus, or of its veins, is an essential anatomical characteristic of rperal fever?

2. *These lesions are often not sufficient to influence the progress of disease, or to explain the cause of death.* The most malignant n of the disease, that in which a fatal result occurs the most edily, offers the fewest and the least striking structural lesions. longer the disease continues, the more prominent and the more nifest are the organic lesions. Does not this prove that the lesions consecutive or secondary,—that there is a primitive source, an ginal cause of vital depression, which sometimes destroys life so idly that there is no time for the development of the secondary ·bid alteration. The symptoms are not, then, the result of these ons, but the result of some specific agent—some morbid poison, ch subsequently develops the autopsic lesions. Sometimes this

morbid poison so overwhelms the system, that the patient dies in a few hours, without any reäctional symptom. It is not in these cases that we have the most marked structural lesions.

3. *We may have inflammation, even to an intense degree, of any of the organs in a puerperal woman, in which the principal lesions of puerperal fever are found, and yet the disease will lack some of the essential characteristics of puerperal fever.* I mean to say, we *may* have peritonitis, or phlebitis, or metritis, in the lying-in woman, and yet the disease will be quite distinct in its mode of attack, in its symptoms, in its morbid anatomy, and in its treatment, from puerperal fever. Take peritonitis, for example: it may be excited by a difficult and protracted labor, by the application of cold to prevent hæmorrhage, by improper exposure, and by other well known exciting causes. But puerperal fever, with the peritoneal lesion, may attack the patient after most favorable delivery, and without any obvious cause. Then the symptoms of the disease show that it has a special character, for in the puerperal fever, with the peritoneal lesion, the symptoms of the first stage of peritonitis are absent; the peritoneal symptoms are those of the second stage, or that of collapse, as for example, we have diarrhœa very frequently instead of obstinate constipation. The pain in peritonitis commences in the region of the uterus. In puerperal fever the pain often commences at the epigastrium. In peritonitis the pulse corresponds in character with the local symptoms, increasing in frequency as the local symptoms increase, diminishing as they disappear. In puerperal fever the pulse bears no relation, or at least a very slight one, to the local symptoms. In puerperal fever it is the pulse which tells the story, as to the exact condition of the patient, not the local symptoms. So also we may have phlebitis in the puerperal woman, and not have puerperal fever. No one, at the present day, would use the term phlegmasia alba dolens, and puerperal fever, as synonymous. Yet this is a phlebitis, a circumscribed, adhesive inflammation of the vein, to be sure, but nevertheless a phlebitis. But I go farther: we may have uterine phlebitis, and not have puerperal fever. The same contrast could be drawn between the two, as regards the mode of attack, symptoms, and treatment—the difference being, that the one disease follows the laws of ordinary inflammation, and that in the other the toxæmic origin of the disease gives it quite a different character. These differences were strikingly illustrated in the recent epidemic at Bellevue Hospital. In the beginning of the epidemic I had charge of the lying-in wards. I must ask permission to read a short extract

n the April number of the American Medical Monthly, giving
ie clinical remarks of my own, made at Bellevue Hospital on the
of February last:

'In the latter part of January, succeeding a period of almost
paralleled cold, came that long spell of warm, damp, close, foggy
ther. This change had scarcely set in, when one after another,
the women were delivered—these wards having been previously
lthy—they began to develop, one pelvic cellulitis, another peri-
itis, another ovaritis, another metritis, all of the asthenic type,
l with an early tendency to gangrene or suppuration, while scarce
escaped without a threatening at least, of those terrible tor-
nts of nursing women, sore nipples or mammary abscess. Indeed
well established did this state of things become, that a pulse of
hundred and twenty and a flushed cheek were looked for as mat-
s of course on the morning after confinement, and the pleasant,
pulse, and cool skin of the physiological recovery, were luxu-
s which the attendant physician dwelt lovingly and long upon,
en at long intervals they presented themselves. These cases, not-
hstanding that they bore the outward semblance of inflamma-
ns, were yet, in their mode of progression, constitutional effects
l indications for treatment so different from the ordinary phleg-
sia as to lead Dr. Barker to announce his belief in the specific
racter of these diseases; that the quasi inflammatory processes
en on by these organs were, in reality, the results of the action
a poison infused into them through the blood, and stirring up its
uliar excitement wherever it found the proper amount of eom-
ed irritation and exhaustion to insure it a nidus, just as the typhoid
son awakens its deceptive pseudo-inflammations in the brain, the
gs, the intestines. 'Treat these cases,' said he, 'as idiopathic
ammations, and you must inevitably kill your patients.' Most of
se cases were treated successfully, by early local derivation or
pletion, followed or even accompanied by profuse general stimu-
on. Three, however, terminated fatally, two by suppuration into
pelvic cavity and purulent absorption, in one of which a large
nber of abscesses, from the size of a walnut down, were found
the lungs—and one by gangrene of the cervix, extending to the
cous membrane of the body, and involving to a slight extent, the
terior walls."

The next point, to which I wish to call attention, is *that the ons themselves differ materially from those having an inflam-tory origin.* Professor Murphy has so clearly pointed out these

distinctions that no apology is necessary for quoting them : —

"In *peritonitis* all the arterial capillaries are highly injected : hence the intestines are streaked with bright red lines of capillaries that encircle them. In *puerperal fever* the *venous* capillaries predominate : hence the livid hue of the intestines, and the dusky red color of the patches and streaks on their surface. In peritonitis the lymph which is poured out is adhesive, uniting the different parts like glue. If removed from the surface of the intestine on which it is deposited, the strings of this lymph are broken across, and the surface is rough ; the quantity of serum poured out is not great, and, being lodged in the cavity of the pelvis, may at first escape observation. In puerperal fever, that which we call lymph is not adhesive : it is much more abundant than adhesive lymph, covering the fundus of the uterus, the intestines, the liver, the diaphragm ; it is found, also, in the pleura : its color varies from a dusky brown to a pale yellow : it may be peeled off the liver, the intestines, or the uterus, quite easily : the surface from which it is taken is smooth, and that of the intestines is a dark red color. The quantity of serum is equally profuse ; and this substance being dissolved in it, gives it a lactescent appearance, like pus : hence it is called sero-purulent fluid. Thus, when the abdomen is opened, a large quantity of this fluid always escapes. It will be objected that this sero-purulent fluid is also met with in peritonitis. This is perfectly true ; but it is necessary to note the stage of the inflammation in which it is observed. I have never met with it unless in the second stage of the attack. When a patient died in the first stage there was none of it. I conclude, therefore, that in the former instance (the second stage) such effusions only occurred when the constitution was sinking under the attack ; but in the latter, when death took place from a different cause, the effusions noticed were the true products of inflammation. In puerperal fever the greater the intensity of the seizure the less the chance of meeting anything like lymph. In the most intense forms no effusion at all may take place. In a degree less intense, a large quantity of serum, colored brown by blood, is found in the peritoneum and throughout the tissues ; the lymph poured out is of the same color, having no adhesion to the surface on which it lies, as if the fibrine of disorganized blood had been deposited there. In the next degree, the same kind of lymph, or fibrine is found, of a yellow color, with a quantity of sero-purulent fluid. And lastly, in those cases in which the constitution for a time struggles successfully against the fever, some adhesive lymph will be

, with, mixed up with a larger quantity of what I have just cribed."

The next argument which I adduce in proof of the doctrine that rperal fever is a zymotic disease, and not a local phlegmasia, is *t simple inflammatory diseases are not communicable from one ient to another through the medium of a third party.* It may be ected that this argument assumes that puerperal fever is thus mmunicable, which is not proven, and is one of the points now ler discussion. With all due deference to those present who may er from me, if any such there be, I must be allowed to say that I nk no one fact in medicine is better established than this. The stion of contagion is not one of abstract reasoning, but one of facts; l of these facts, a few, amounting to positive demonstration, must be clusive. Negative testimony is utterly worthless in settling such a stion. I should almost feel that I insulted the intelligence of se present by entering into an argument on this point at the pres- day. Prof. Oliver Wendell Holmes, in his essay on the *Conta- usness of Puerperal Fever*, has brought together an array of facts ich must, I think, be convincing to every unprejudiced mind. r myself I would say, with Dr. Blundell, that I had rather those steem the most should be delivered, unaided, in a stable, by the nger-side, than that they should receive the best help, in the fair- apartment, but exposed to the vapors of this pitiless disease. I uld heartily concur with the emphatic declaration of Dr. Holmes, t "if, on this point, there is any voluntary blindness, any inter- ed oversight, any culpable negligence, even in such a matter, and facts shall reach the public ear, the pestilence-carrier of the ng-in chamber must look to God for pardon, for man will never give him." Now, then, if this disease is thus communicable, is there other local phlegmasia that is thus communicable? It may be ected that dysentery is sometimes contagious. I think I have self been through an epidemic of dysentery which was evidently ntagious, but I should answer, first, that it remains to be proved t this form of dysentery is simply a local phlegmasia; and sec- lly, that there is no evidence that a healthy person can communi- c this disease from one person to another.

My next argument is that *the prophylaxis of puerperal fever is the prophylaxis of local inflammation.* In the large hospital of enna, from 1840 to 1846, one in every ten mothers delivered perished, efly from puerperal fever. In May, 1847, Dr. Semelweiss pre- nted students from touching parts at the autopsies, and directed

all of them to wash their hands in a solution of chlorine, before and after every vaginal injection; and the mortality from this time so far diminished that in 1848, not above 1 in 74 mothers died. Does not this fact prove the toxæmic origin of the disease in these cases, and that the local lesions are secondary—reäctive, and have less pathological value than the change which precedes it?

It may be objected that the views which have been advanced as to the pathology of puerperal fever, entirely ignore the existence of an epidemic influence, and that the epidemic influence may give a specific character to the local phlegmasia. From Sydenham, we have learned the phrase, "type of the season," and another phrase has come into use, meaning nearly the same thing, viz: "epidemic constitution." Now what is meant by these terms? Clearly they must refer to certain atmospheric or telluric influences which modify the susceptibility of the system to disease, or which increase the virulence of the poison which develops disease. That this influence really exists, acting in both ways, I think there can be no doubt. It sometimes produces its influence wholly on the system, diminishing the vital resistance to disease, and rendering inflammatory action asthenic in its type; or the opposite result may be produced. So also, it may increase the virulence of the poison which gives rise to the zymotic diseases. Puerperal fever is most notably susceptible to an epidemic influence. I have thus given my reasons for believing that puerperal fever is an essentiality, that it is a zymotic disease, resulting from the absorption of a specific poison, and that its anatomical lesions are secondary.

The etiology of this disease has been so fully and so ably brought before the Academy by Prof. Smith, that I should not expect to be listened to with patience if I attempted to add anything to what he has said. So also in regard to its semeiology, it would be presumptuous in me to attempt to add anything to what is already known to the profession. The question of contagion, is one on which the profession is divided. My own views on this point have already been sufficiently clearly expressed. I certainly would not, at this day, seek to change the views of any one who has intelligently formed a different opinion, for I should deem it a hopeless task. As I do not intend again to occupy the time of the Academy during this discussion, I will beg your indulgence while I make a few remarks in regard to the treatment. This is the grand aim to which our discussion should tend, and its practical value rests on the bearing which it has on the therapeutics of the disease. The statistics

the disease show that when it prevails in an epidemic form, at one in three die. It is to be hoped that in the progress of icine, the resources of art will prove successful in greatly diminig this frightful mortality. In some cases, the morbid poison is ntense as to overwhelm at once the vital powers. Just as in e cases of malignant scarlet fever, there is no capacity for reäc-, and the patient dies in a few hours after the attack. In such s as these, art must stand back appalled. The treatment of puerl fever has afforded quite as fruitful ground for controversy as pathology. I do not propose to review the various plans which e in different epidemics been supposed by violent partisans to be most successful. I shall only refer to those general principles ch should in my estimation govern the treatment—and give a illustrations of some special methods of treatment. There are no ific therapeutics for puerperal fever. The sooner this idea is issed from the mind, the more probable is it that the treatment pted will have a rational and philosophical basis. No one method lapted to all types of the disease. It must vary according to virulence of the epidemic or special poison, according to the conn of the system as to its vital powers when the poison is received, according to the intensity and severity of its secondary lesions. ould say in general terms, that the indications are : *First, to nate from the system as much of the morbid poison as is possible eans of depletion and the other evacuants, as purgatives, emetics, etics, &c.*

nfortunately this indication, owing to the peculiar character of disease, can rarely be fulfilled, except to a limited degree. In opinion of some, venesection is the grand remedial agent for puerl fever, although, at the present day, the advocates of this measas essential to its successful treatment, are few in number. It ed to be the most efficient remedy in the epidemics met with by lon, Hey, Armstrong, and in one seen by Gooch. But in r epidemics, we have the testimony of equally sagacious observthat it could not be borne. It proved an agent of destruction. . Murphy has well made the point, that it may prove useful, re it can be tolerated, as a means of evacuating a certain amount e materies morbi, thus relieving the central organs in which this oned blood has accumulated. It has not been my lot to see epidemics which would tolerate blood-letting, yet I believe are some. In sporadic cases it is, doubtless, much more frctly indicated. It seems to me that the principle which should

govern our practice in this disease, should be the same as would govern our practice in any other disease. Venesection should never be resorted to simply because the case is one of puerperal fever, but because the symptoms indicate that depletion is necessary. Admitting the pathological view, that "the fever is a natural effect of intense constitutional irritation, from local inflammation," it does not follow that blood-letting will be the remedy, or even that it can be tolerated. Rejecting this pathological view, it does not follow that venesection is not sometimes of great importance in the treatment of this affection. I hold that it is equally absurd to insist upon this as the cardinal remedy, as to denounce it as never applicable in the management of this disease. Common sense, not theory, must be our guide in regard to the use of this measure. The same general principles should govern us, in resorting to purgatives, emetics, diuretics, &c. Each of this class of agents has had warm advocates, and have, undoubtedly, been specially indicated, and proved eminently successful in certain epidemics. They are neither to be excluded wholly, or relied upon entirely, in the treatment. They may be indicated in certain cases, but they are only to be resorted to when there are special indications for their use. We are to remember that it is not generally our rôle to put out the fire, but to treat the burn, and hence the importance of the second indication, viz:

To control the vital disturbances resulting from reäction. These are principally vascular excitement and nervous irritation. It is unnecessary for me to enter into an elaborate argument, to prove the importance of these indications, for it is obvious that by vascular excitement and nervous irritation, the vital powers are exhausted, and death follows. It has been before remarked that it is the pulse which indicates the condition of the patient, much more than the local symptoms. Of the agents for reducing vascular action, we have first, venesection, when it can be borne, which is rarely the case. This means of reducing vascular excitement involves a loss of vital power. But we have, in the Materia Medica, an agent lately brought prominently before the profession, which acts specifically as an arterial sedative, without depressing the vital powers. I refer to the veratrum viride. We are indebted to Dr. Tully, of New Haven, for our first knowledge of its medicinal properties, and the profession in certain parts of Connecticut were familiar with its use long before Dr. Norwood's name was associated with it. It is simply and solely an arterial sedative. By it the pulse can be brought under volun-

y control. For more than twelve years I have been accustomed use it for this purpose, and for several years I have used it in puer- al fever, and in no disease have I seen its value more strikingly ibited. It is an agent which requires care in its use, and in those es where its full effects are required, I never allow them to be left hout careful medical watching. The patient must be seen at short ervals. I have never seen any unfortunate results from its use, but ave seen it give rise to very severe temporary depression.* As an stration of its action, I will read the report by Dr. Cobb, House ysician, of a very severe case of puerperal fever, which occurred in service at Bellevue Hospital :

' Kate Short, aged 23 years, fell in labor in full term at 2 o'clock P. Feb. 25, and was delivered of a healthy child at 8½ o'clock on the ning of the 26th. Nothing unusual occurred in her labor, except t the second stage was somewhat prolonged. Placenta came away lue time, and was not followed by hæmorrhage. First preg- cy.

'ebruary 28th, at 8 A. M., she was seized with a very severe !, followed by increased frequency of pulse, and pain over hypo- ric region, extending as high up as the umbilicus. This pain very much increased by taking a full inspiration, or by the ication of pressure. Tympanitis very considerable. The dis- ge abundant and very offensive. Pulse 140. Respira- s 24.

t 1 o'clock P. M. Dr. Barker saw her, and recommended that should be transferred to the Fever Wards, and put on the use of Tinctura Veratri Viridis.

t 2 o'clock P. M., after having been removed to the Fever ds, her pulse was 140. Respirations 24. Pain over hypogas- region intense. Tympanitis very considerable. Discharge abun- and very offensive. No mammary secretion. Dr. Barker

*There is a marked difference in the power of the article grown at the South, mpared with that grown at the North, which should not be forgotten in ribing it. When I removed to this city, in 1850, the tinc. veratrum virid. ot kept by the druggists here, and I therefore procured some from Norwich, . I was accustomed to prescribe this (a saturated tincture made from the e growing in Connecticut) in doses of from 12 to 20 drops. In the first in which I made use of the tincture now found in the shops here, alarming cation was produced, and I soon learned that I must diminish, very decid- the dose. Prof. Dickson, of Charleston, S. C., informs me that 7 drops is a dose of the tincture used at the South.

requested that she should be seen hourly by one of the House Staff, and that her condition, as to the state of the pulse, respiration, and other symptoms, and the dose of the veratrum viride given, should be recorded at each visit. The following is the record thus kept :

February 28th.	*Hour.*	*Pulse.*	*Resp.*	*Drops.*	
	2 PM.	140	24	10	
	3	127	22	10	
	5	140	22	10	
	6	132	12	10	
	7	120	20	10	
	8	80	20	9	Bowels moved once.
	9	75	16		Vomited a greenish colored fluid. Bowels loose.
	10	66	16	4	Vomiting ceased. Bowels moved once.
	11	65	22	7	
	12	58	13	2	
March 1st.	1 AM.	64	52	6	Respiration very irregular. Inclined to sleep.
	2	58	25	2	Sleeping.
	3	59	21		Hiccough and headache.
	4	60	18	1	Hiccough still continues.
	5	66	20		Severe headache. Vomited a greenish colored fluid
	6	66	21		Headache severe, and very restless. Vomited several times within last hour. Hiccough.
	7	58	20		Vomited once since last visit. Vertigo and headache.
	8	52	28		Sleeping.
	9	60	19		
	10	68	21	1	Slight hiccough.
	11	70	23	2	
	12	80	28	3	Tenderness over abdomen, marked. Tympanitis somewhat diminished. Discharge dark, bloody, and very offensive.
	1 PM.	80	20	4	Visit of Prof. Barker.
	2	92	24	8	
	3	76	24	8	Face flushed.
	4	76	28	9	Sleeping.
	5	68	28	8	Sleeping.
	6	66	28	8	
	7	68	26	6	Slight hiccough. Bowels moved once.
	8	66	18		Vomited a greenish colored fluid.
	9	68	24		Vomited once since last visit.
	10	60	28		Sleeping.
	11	64	28		Still sleeping.
	12	66	28	2	Sleeping still.
March 2d.	1 AM.	56	32		
	2	70	24	3	Complains of pain in left thigh. There is slight swelling, and along its internal surface, over the course of the veins and lymphatics, the tenderness is so great that she can scarcely bear the lightest touch. Tenderness over abdomen still continues. Slight Tympanitis. Discharge abundant, dark, bloody, and very offensive. No mammary secretion.
	3	76	24	4	
	4	65	20	3	Sleeping.
	5	78	22	8	
	6	68	22	4	
	8	64	24	4	
	9	72	24	6	
	10	64	28	2	Bowels moved once.
	11	72	28	6	
	12	70	24	5	
	1 PM.	64	24	3	
	2	60	20		
	3	64	24		
	6	68	28	3	
	7	72	28	5	
	9	80	28	6	Face flushed.
	10	80	26	6	
	11	80	28	8	
	12	80	28	10	Sleeping.
March 3d.	1 AM.	80	29		Vaginal discharge now ceases to be offensive. No mammary secretion. Tympanitis still remains. Tenderness over abdomen still continues, though not so well marked. Tenderness and swelling in left thigh still continues.
	2	78	28	10	
	3	80	28	8	Slight hiccough.
	4	72	20	4	
	5	68	28		Vomited a greenish colored fluid. Headache. Hiccough. Bowels moved twice.
	6	64	24		
	8	60	24		
	10	68	24	5	
	11	70	24	3	
	12	76	28	6	

	Hour.	Pulse.	Resp.	Drops.	
arch 3d.	1 PM.	80	28	6	
	2	80	22	8	
	3	76	30	4	
	4	76	25	5	
	5	72	32	4	Sleeping.
	7	64	32	2	
	8	72	28	5	
	9	68	30	4	
	10	68	28	3	
	11	72	28	5	
	12	70	30	7	Sleeping.
arch 4th.	1 AM.	72	32	8	Tenderness over abdomen not so intense. Slight tympanitis. Vaginal discharge now appears to be natural. Tenderness and swelling on internal surface of left thigh now seems to be diminishing. No mammary secretion.
	2	70	30		
	3	64	28	2	
	4	64	28	3	
	5	60	24	2	
	6	60	28	2	
	7	60	28	2	Bowels moved twice.
	8	58	28		
	9	60	28		
	10	56	28	2	
	11	64	32	3	
	12	72	24	4	
	1 PM.	78	32	6	
	2	80	28	8	
	3	80	24	8	
	4	80	30	8	
	5	80	28	8	Sleeping.
	6	60	32		
	7	64	24	6	
	8	60	24	2	
	9	60	28	2	
	10	60	24	2	
	11	60	26		
	12	58	24		
rch 5th.	1 AM.	60	22	3	She now says she feels much better. Her countenance looks much brighter, and she appears to be much improved in every respect. The tenderness which has been so intense over the abdomen, now is scarcely noticeable. Tympanitis very slight. Discharge very scanty, but normal. No mammary secretion. The swelling and tenderness on the internal surface of the thigh, in the course of the veins and lymphatics, has now disappeared altogether.
	2	68	26	4	Sleeping.
	3	60	22	2	
	4				
	5				
	6	70	30	6	
	7	64	24	4	
	8	76	24	6	
	9	76	24	6	
	10	72	28	6	
	11	64	24	3	
	12	68	24	6	
	1 PM.	64	28	5	
	2				
	3	56	28		
	4				
	5	64	24	5	
	6				
	7				
	8	68	26	4	
	9				
	10	72	24	4	
ch 6th.	8 AM.	70	24	6	Feels well; improvement marked. No tenderness on pressure over abdomen. No tympanitis. Discharge still scanty, but normal. Slight mammary secretion.
	11	76	24	4	
	12				
	1 PM.	72	24		
	5	78	28	8	
	6				
	7	76	26		
	8				
	9				
	10	72	24	4	
h 7th.	9 AM.	76	24		She says she feels well and hearty. No tenderness over abdomen. No tympanitis. Vaginal discharge healthy. No tenderness or swelling in left femoral region. Appetite good. Bowels regular.
h 8th.	10 AM.	76	24		Continues to improve very fast.

rom this time she continued to improve, and in a short time was discharged ell and hearty as she ever was."

Now here is a case occurring in a hospital, at the time of an epidemic, presenting a combination of symptoms which all familiar with the disease would pronounce truly alarming. By the verat. virid. the pulse was brought down from 140 to 60 per minute, and it was never permitted to rise above 80. The quantity administered varied according to the condition of the patient, two, three, or four drops being frequently sufficient to control the vascular excitement. No other medicine was used. In many other puerperal cases, I have seen equally striking results. I will briefly mention one which I saw, in consultation with Dr. Sayre, the tenth day after confinement. She was a primipara, and her convalescence seemed perfectly normal, until the sixth day, when she began to exhibit some appearance of mental disturbance. She was especially anxious in regard to her religious condition. Gradually a high state of nervous excitement was developed, with insomnia, and when seen by myself, she had been decidedly maniacal for more than twenty-four hours. Her respiration was short and hurried, her pulse very rapid, her countenance anxious and frightened; she was incessantly talking and starting with apprehension, from the slightest movement in the room. No physical exploration could be obtained, but there were no local symptoms indicating pelvic trouble. She sat up in bed, and moved from one part to another with great rapidity. The verat. virid. was now given, and by its influence the pulse was brought down below 70 per minute, the respiration became slower, the mind tranquil, and she was enabled to sleep. I am informed by Dr. Sayre, that in the course of a few days there was developed, in the pelvic cavity, an extensive abscess, which pointed externally, near the sacrum. Her convalescence was somewhat prolonged, but she eventually recovered.

One of the most important indications we are called upon to fulfil, in the management of this disease, is to allay nervous irritation. There is no doubt that the most frequent of all the lesions of puerperal fever, are those of the peritoneum, and that the disturbance to the nervous system is much more severe than from any other local cause. It is well known to most of the profession, that within the last four or five years, this has been treated by heroic doses of opium, or of some of its preparations. It has long been used by the profession in the treatment of peritonitis, and Graves and Stokes have demonstrated its great value in idiopathic, or traumatic peritonitis, but to Prof. Clark belongs the honor of fully testing it, in what he calls puerperal fever, with peritoneal lesion. This is his own ground,

and I will not encroach upon it, inasmuch as we hope to have, in detail, the results of his enlarged experience. I have treated a few, a very few compared with him, by this method. It is astonishing to see to what extent patients will tolerate opium, where the peritoneal lesion predominates, but it is only in this form of fever that this great tolerance exists. The quantity given in some cases, without producing narcotism, is enormous. But there is one point to which I wish to call attention, and that is a test whether the action of this drug is proving beneficial or not. If opium be pushed to incipient narcotism, or a point little short of it, a gradual decrease in the frequency of respiration results. In some of my cases, the respiration went down to 14, 12, and 10 per minute. Now, then, the opium treatment is acting beneficially, when, in connection with the reduction of the frequency of the respiration, there is a corresponding decrease in the frequency of the pulse, but if the opium is pushed to the point of incipient narcotism, the respiration growing slower and slower, without a corresponding decrease in the pulse, I should say the opium treatment is to be abandoned at once. In one case that occurred at Bellevue Hospital, some two years since, the opium had been pushed to such an extent, that galvanism had been resorted to to make her breathe. When I saw her, the respirations were 10 and 11 per minute, while the pulse was about 140 per minute. Seeing this slow respiration, with the frequent pulse, I suggested that no more opium should be administered, as I thought its continued use would be likely to overwhelm the vital powers. The veratrum viride was then given, and in a few hours the pulse came down below 80. This patient eventually recovered. I will state, then, as my conviction, that in that class of cases where the peritoneal lesion predominates the opium treatment has proved successful to an extent which no other has.

In many cases, to control the vital disturbances resulting from reäction, it will be necessary to use a variety of agents to accomplish this end. Venesection, veratrum viride, opium in full doses, camphor, all may be indicated, and prove eminently serviceable in the same case. In illustration of this, I will mention a case which occurred in my private practice. The patient, a primipara, was delivered by the forceps, after a very severe labor, on the 4th of July last.

On Sunday, the 5th, everything seemed to be going on in the most favorable manner. I saw her again on Monday morning, and there was no indication of disturbance of the general system, except that she complained somewhat of nausea, her breath smelled like raw

beef, and the tongue was covered with a pasty, white coat. I was sent for to see her again that day, between 5 and 6 P. M. I found that she had been seized, a little time before, with a violent rigor, her countenance was pale and haggard, wearing an anxious, despondent look. She complained of intense pain over the lower part of the abdomen, particularly over the left iliac region. Her pulse was about 132 per minute. Here was a case calculated to excite the gravest apprehension. The following prescription was made, and it will at once be apparent what indications it was designed to fulfill:

R. Pulv. G. Camphor, - - ʒss
Sol. Morphiæ (Majend.), - gtt.lxxx
Tinc. Aconite, - - - gtt .xvj
Mucill. G. Acaciæ, - - - ʒjv
M. S. A tablespoonful every second hour.

Turpentine fomentations were applied to the abdomen. She was seen again by me late that evening. The pain was decidedly less, but the pulse continued very frequent. She obtained no sleep that night. The mixture was continued the next day, at intervals of four hours. On the third day from the attack, fifth after delivery, she was seen by my colleague, Dr. Peaslee, who found that the pain had ceased, skin soft, pulse 92, but there was still this pasty coat upon the tongue. She subsequently had some swelling and pain in the left leg, along the track of the crural vein, but this continued but two days. The mixture was continued in diminished doses for several days afterwards, as the pulse continued frequent after all the local symptoms had disappeared. She had no mammary secretion. Under this treatment alone she perfectly recovered. I will give a brief outline of another case, which was to me most interesting and instructive. This patient was confined about the 1st of August, and in this case also the forceps were necessary on account of the position of the head. It was the right occipito-iliac posterior, the occiput rotating back to the sacrum, instead of anteriorly. After the labor was completed, I gave her a full dose of opium, as I usually do, when it has been severe. For two days after delivery, everything went on favorably, but on the evening of the third day, she had a slight rigor, and was seized with a most intense pain in the lower part of the abdomen and in the vagina, so severe that although a person of great self-control, she shrieked out with agony. Her pulse was very rapid. Turpentine fomentations were applied to the lower part of the abdomen, and Majendie's Sol., in full doses, was given until the pain subsided. The pulse continuing very rapid,

then gave the verat. virid. in 12 drop doses every hour, until the ulse was brought down below 80, and there it was my aim to keep . On the evening of the fifth day after confinement, I was sent or in great haste, when I found her with symptoms of cerebral con- estion of the most alarming character. The attaek had come on ıddenly, without premonition. She complained of asphyxia, her ountenanee was livid and turgid, and every appearance was such s to indieate the most imminent danger. I should mention that, lthough not a person of full habit, I had found it necessary to bleed er a few weeks before confinement.

I now opened a vein and abstracted about 30ʒ, whieh at once elieved her of her cerebral symptoms. Previous to her confinement ıe urine had been tested for albumen, but none was found. The lood now drawn was examined by my friend, Prof. Doremus, and ound to contain urea. I say after bleeding there was entire and omplete relief from all the cerebral symptoms, but still the pulse mained rapid and frequent, and there was still a tendeney to pain the vagina and pelvie cavity, requiring the oceasional use of Iajendie's solution. The point that I wish to call attention to is, that e second day after veneseetion the local symptoms disappeared in a reat measure, but if the veratrum viride was not continued the ılse would become extremely rapid, and this patient required the nstant and steady use of this remedy for thirteen days. It may said by some that these were not cases of puerperal fever, and I ıve anxiously asked myself the question whether they were so or ere cases of loeal phlegmasia. I answer that they were cases of ıerperal fever, and I will mention only one reason for believing so, z : after all the local symptoms had disappeared there was still left idenee of poison in the system as shown by the rapid pulse.

3d. *To combat the local secondary lesions which may be developed.* will not take up the time of the Academy in enlarging upon is part of the treatment. Loeal depletion, counter-irritation, mentations to the abdomen, turpentine endermically, opium to sub- e pain, chlorinated injections—the value of all these measures ıere speeial indications for their use exist, has long been settled by e profession. The discriminating physician will employ eaeh or all these methods as adjuvants to the radieal treatment of the case. I will only add one other indieation, viz : to *sustain the vital powers the system.* In other words, keep the patient alive. There are a rtain class of cases where the system seems to be overwhelmed, d yet life will be preserved by the heroic use of stimulants and

good nutrition. I believe many are permitted to die from the neglect of these resources. It seems to me that after a patient with puerperal fever has lived for forty-eight hours, there is constant encouragement for effort, and that the danger is, in a certain sense, diminished in proportion to the duration of the disease. Without enlarging upon this topic, I will read a brief abstract of another case, reported by Dr. Cobb, which occurred in my service at Bellevue Hospital, which I think will illustrate my ideas better than argument. This patient was so utterly prostrate by the disease, and had such a variety of secondary lesions, that she was regarded by myself and all who saw her as past praying for.

"Matilda Smith, aged 21 years, first pregnancy, was delivered, in the lying-in wards of Bellevue Hospital, of a healthy child, at full term, at 8 P. M., February 11th. For the first few days after delivery she appeared to be doing well. Nothing unusual occurred to call attention to her case until February 17th, when she had a severe chill, with a quick, rapid pulse, and intense pain over the region of the uterus. The vaginal discharge was profuse, very dark colored, and excessively offensive. A large blister was applied over the region of the uterus, and Dover's powder, calomel, and camphor were administered, and she was removed to the fever wards.

This treatment was continued for forty-eight hours, but without benefit. On the contrary, her symptoms were constantly growing worse. Her pulse was above 140, weak and irritable. Exquisite tenderness over the uterus, the vaginal discharge abundant, very black, and extremely offensive. She vomited frequently a greenish colored fluid, and became somewhat deaf. Dr. Barker now ordered porter, milk punch, beef tea, as much as the stomach could take care of, and a full opiate at night. For ten days her condition varied but little from that above described. The stimulants were pushed to the point of tolerance, but the pulse continued very weak, rapid, and irritable. Her whole aspect was as bad as possible. Quinine was tried, but it could not be borne, as it induced severe headache.

February 28th she had an attack of capillary bronchitis, accompanied with profuse perspirations and coldness of the surface. This was relieved by extensive dry-cupping over the front and back, and the liberal administration of Carb. Ammoniæ. A few days after an abscess made its appearance in the right mamma, which, when opened, gave exit to at least two pints of very offensive pus. She also had a large bed-sore. These three complications, capillary bronchitis, mammary abscess, and bed-sore, made their appearance about the

ame time. Diarrhœa set in March 3d, which was found very difficult o control. On the 4th it is recorded that she took a moderate quan-ity of beef tea, two bottles of porter, and 30ʒ of port wine. March th, she appears somewhat better. Pulse varying from 125 to 135. 'erspirations still very profuse, and vaginal discharge was still very ffensive. Tenderness over the uterus not so intense; diarrhœa ceased. 'rom this time she gradually improved, but her convalescence was reatly retarded by the extensive suppurations in the mamma and ed-sore. Early in April she was discharged cured."

This case was watched with great interest by the students in ttendance from the different Colleges, and I need not add that her ecovery was as gratifying as unexpected. In the interesting history f the recent epidemic of puerperal fever in the Dublin lying-in-hos-ital, by Dr. McClintock, the present able Master, it will be observed hat he found it necessary to make a liberal use of stimulants. Apol-gizing for the length of my remarks, I will occupy the time of the cademy no longer.

Prof. Clark then rose and stated, that he did not rise to continue he discussion. He congratulated the Academy upon hearing such n interesting paper from Dr. Barker. If he was not witty himself, e seemed to have been the occasion of wit. It had proved a good rtune to the Academy that Dr. Barker was not present when this bject had been brought up before. The Academy would agree ith him that it was a very connected and substantial argument to ove his point. It did not differ very materially from his own views n the subject, and he would propose that it be continued for discus-on at the December meeting, when he hoped to be present. At the me of the November meeting, he thought it probable that he should e obliged to be absent from the city.

PRESENTED BY THE AUTHOR.

DISCUSSION

ON

PUERPERAL FEVER.

Dr. Barker said: One year ago this evening I had the honor of fering to the Academy some remarks on the pathology and thera- uties of puerperal fever. Since that time this body has been mainly grossed, during four of its sessions, by the consideration of this im- rtant subject. The Academy of Medicine in Paris have also been gaged in a most zealous discussion of the same subject for many nths past, in which MM. Beau, Cazeaux, Cruveilhier, Danyau, De- ul, Dubois, Guerin, Hervez de Chégoin, Trousseau, Velpeau, and hers have participated, a list of names comprising the first talent of at body. Many articles have also appeared in the French medical ess, among which I should mention as specially valuable, those by . Jacquemier, in the *Gazette Hebdomadaire*, and those by M. Behier, *L'Union Médicale.*

I may also add, that during the last twelve months, my practical perience in this disease has been greatly enlarged both in hospital d in private practice, as we have not only had the misfortune of countering it in the Lying-in Wards of Bellevue Hospital, but it s also been unusually rife in this city. From October, 1857, to tober, 1858, one hundred and seventy-three deaths from puerperal er have been reported at the City Inspector's office.

The following table gives the deaths from puerperal fever for each nth, and it is interesting to note the parallelism between the deaths m this disease and erysipelas:

Disease.	Oct. 1857	Nov 1857	Dec 1857	Jan. 1858	Feb. 1858	Mar. 1858	Apr. 1858	May 1858	June 1858	July 1858	Aug 1858	Sept 1858
Puerperal Fever,.	5	9	14	17	26	21	21	19	13	13	9	6
Erysipelas,..... ..	4	6	16	13	20	14	23	21	8	13	5	3

In Paris there has certainly been afforded an immense field for studying this disease, as in five years, 1852–56, 644 deaths have occurred, in six of the principal hospitals, from puerperal fever.

I may be pardoned for saying, that I have most carefully and conscientiously read all that has appeared in the French medical journals, and that I have observed, with the most earnest desire for truth, in order that I might correct any error in reasoning or deduction, into which I may have previously fallen.

Before alluding to some points, in regard to the pathology of this affection, I will give a very brief summary of the views of the principal speakers in the French Academy. The discussion originated with M. Guerard, who stated his belief, that so far as the nature of the disease was concerned, we must look for something beyond the mere local lesions, and that its phenomena cannot be explained by means of purulent infection. M. Depaul was the most able advocate of the doctrine of the essentiality of puerperal fever, although, instead of the term puerperal fever, he would prefer calling it puerperal typhus, or puerperal septicæmia. He believes that its essential character consists in a primary alteration in the blood.

In the autopsies which he has made, he has uniformly found the blood in this disease to possess a peculiar fluidity, and to be generally of a violet red color, easily impregnating and coloring the tissues. It often also presents a remarkably oily appearance, and coagulates with difficulty. He quotes from Vogel, (in Virchow's Handbuch,) who states that lactic acid confers an acidity upon the blood in this disease, and that in some cases carbonate of ammonia, in others the hydrosulphate, is found in it. The fluid loses its aptitude for coagulation, as do the globules to redden on the contact of air, and therefore their fitness for the respiratory act. The globules are in part decomposed and dissolved in the serum, giving it a reddish or dirty brown color. Scanzoni asserts that in some cases there is an increase of fibrin; in others, a true pyæmia, the constituent elements continuing in their normal proportions, and in others, again, a true putrefactive dissolution or septicæmia. M. Depaul regards the epidemic occurrence of this disease as presumptive proof of its essentiality. He, also, as do several of the

er speakers in the French Academy, refers to the fact, that the le-
ns of the solids are of the most varying character, and that in some
al cases these do not exist at all, nothing being appreciable, save
erations in the blood. M. Beau considers puerperal fever as due to
al inflammation (most frequently of the peritoneum,) united to an
ammatory diathesis depending upon an alteration of the blood—
s alteration being an increase of the fibrin, a characteristic of in-
mmation. In the opinion of M. Piorry, the disease in question is
marily a metritis phlebitis or peritonitis, septicæmia or pyæmia.
Caseaux also believes that it belongs to the phlegmasiæ. Jacque-
r, Legroux, and Behier hold similar views. M. Bouillaud consid-
it due to purulent or putrid infection with an inflammatory ele-
nt. Velpeau holds that it is a metro-peritonitis, a lymphangitis, or
ebitis (purulent infection,) modified by the puerperal state. Trous-
u cousiders it as a phlegmasia of a peculiar kind due to a specific
se. Hervez de Chégoin sces in puerperal fever only the results of
ulent or putrid infection. Dubois, Depaul, Danyau, and Guêrard
e the only members of the French Academy who advocated the
nion that puerperal fever is an essential disease, not dependent at
upon local inflammation. M. Cruveilhier considers this disease as
h a fever and an inflammation, and expresses his opinion in nearly
same words as Dr. Clark used in this Academy six months before.
common also with Dr. Clark, he regards the anatomical lesions as
essential feature in the disease. The following are his conclusions:
. Puerperal fever is essentially a traumatic fever.
. The special conditions in which the uterine and the entire organ-
of the woman who has just been in labor constitutes what may be
ed puerperal traumatism.
. The essential anatomical characters of puerperal fever are peri-
tis, sub-peritonitis, or purulent lymphangitis. Purulent uterine
ebitis is incomparably more rare than suppurative lymphangitis.
. It is extremely probable that purulent inflammation of the lym-
tic vessels is a cause of the intoxication of the blood in puerperal
r—bnt this intoxication does not manifest itself by visceral ab-
ses, as happens in purulent phlebitis.
. The possibility of purulent infection of the blood by snppurative
phangitis is not decided in a positive manner.
Now I do not propose to go over the ground of my former remarks,
give my reasons for believing that puerperal fever is an idiopathic
r, which originates from a poisoned state of the blood, and that the
si inflammatory processes which generally occur in this disease are

in reality the results of poison, stirring up its peculiar excitement wherever it finds the proper amount of combined irritation and exhaustion to insure it a nidus, just as the poison of typhus fever awakens its pseudo-inflammations in the intestines, the lungs, and the brain. I will only express my belief parenthetically, that the lesions commonly found in puerperal fever are not due at all to inflammation, but to a pathological process entirely dissimilar and in many respects antagonistic to inflammation.

The whole doctrine of inflammation is now in a transition state. Whether the essential characteristics of inflammation be, as Professor Bennett says, an exudation of the normal liquor sanguinis, or in the words of Professor Alison, inflammation is altered nutrition, it seems to me that the lesions found in puerperal fever, indicating destructive disorganization, are of an entirely different character. I should not allude to this point were it not for a strong conviction that pathological errors in these particulars have led to grave therapeutical errors. There has been one striking difference between the discussion in the Academy of France and this body, and that is, that in the former the great majority who have spoken have advocated the doctrine that the phenomena characteristic of puerperal fever are the results of a local phlegmasia, while this view has not found a single advocate here. Holding the views I do, I must regard this as a matter of mutual congratulation. But there is another point which has not only an important bearing on this question, but on general pathology, and is equally interesting to the obstetrician, the surgeon, and the physician, on which I beg leave to dwell for a few moments—and that is the question of purulent or putrid infection, or of pyæmia and of septicæmia.

As regards this subject, there is a great harmony of view between one of our members, who has taken the most prominent part in this discussion, and several of the distinguished speakers in the French Academy. In order that I may do full justice to Dr. Clark, I quote from the *New York Journal of Medicine*. Dr. Clark said, "It was his object, on a former occasion, to show that these cases" (the cases which, in the belief of Simpson, Gooch, and others, were without lesion of any kind—a simple fever, the poison of which overwhelmed the vital powers,) "were no exceptions to the general rule, but that they were really marked by inflammation, like the others, but that the inflammation was one that had escaped detection; that it was an endometritis, and that the inflammation affecting the inner surface of the uterus involved the open or valvular mouths of the uterine veins, and might produce purulent contamination of the system, while no pus was found

n the veins themselves after death. The evidence of this was in the nflammatory exudation on the inside of the surface of the uterus; the redness of the uterine structure, penetrating a minute distance from within outward; the symptoms of pyæmia and the discovery of pus in listant organs. To present this idea was the chief object of his former remarks, and to give it distinctness he had referred to and recognized the then commonly described inflammatory lesions, viz., the peritonitis, the purulent phlebitis in the uterine sinuses, and the purulent nflammation of the uterine lymphatics. These, together with endometritis, he had stated were the primary *inflammatory* lesions, and that here were other organs subject to inflammation in a subordinate and econdary degree." In another place he asks, "whether the shortest ime" (in which the most malignant form of puerperal fever destroys ife) "is not long enough for endometritis to produce fatal contamination of the blood? or, in other words, in what time purulent infection can overwhelm the vital forces?" After giving a condensed summary of the experiments of Sedillot, in injecting laudable and fœtid us into the veins of dogs, Dr. Clark remarks, "the import of these xperiments, and their relation to the disease we are considering, ardly require comment, especially when it is remembered that the terine cavity is open to the ready access of air; that when inflammation is recognized on its inner surface, it has often been of a character ost likely to furnish a sceptic agent, healthy or degenerated pus, in n angmented, and consequently accumulated stream." These extracts now the importance with which Dr. Clark regards purulent contamination and putrid infection in developing the phenomena of puerperal ever. In the French Academy, M. Velpeau endeavored to prove at it results from purulent infection, and Hervez de Chégoin, that it due to putrid infection. In my former remarks I expressed a doubt hether pus, the product of simple ordinary inflammation, if absorbed washed into the circulating blood, will produce the symptoms which e call pyæmia, or whether, in fact, another element besides laudable is is not essential for the production of these phenomena. As to the fects of putrid pus when mingled with the circulation, there is no oubt, for this has been demonstrated by the experiments of numerous mpetent observers. But with Dubois, I hold that neither purulent ntamination nor putrid infection have anything to do with the develoment of the disease, but that it results from a special poison of the ood, the essence of which is unknown, but the effects of which are ry manifest. I believe this to be true of all that class of cases call- pyæmia, whether puerperal, traumatic, or idiopathic, and that the

extensive and disseminated suppuration are a result of this poison, and not a cause of the disease. The doctrine generally accepted, is, that purulent contamination originates in a phlebitis. Now, simple phlebitis alone is not a disease of great severity. It is often met with wherever there is a traumatic injury or solution of continuity, and it may involve the whole extent of a limb without any great danger, and very rarely has a fatal termination. But sometimes comparatively trivial causes, very slight injuries, are followed by a train of symptoms, the aggregate of which constitute pyæmia, and terminate fatally. Trousseau mentions, that at the Hôpital Clinique, in the service of M. Cloquet, four patients died after the following slight operations, one resulting from forced catheterism, another from depressing a cataract, a third from a slight incision for fissure of the anus, and the fourth was a woman who had a slight incision made in the arm for the extraction of a needle.

Puerperal fever was prevailing in the hospital at this time in the service of M. Dubois. Parallel facts have long been observed by surgeons, and I think I may safely refer to the surgical members of this body to confirm the statement, that during the past winter and spring there has been an unusual tendency to the development of pyæmia. How can such cases as the above be explained by the doctrine of purulent contamination? It is a matter of common observation that large abscesses are absorbed and eliminated without occasioning so-called purulent infection. Dr. Bennett relates a very interesting case of pyæmia, terminating fatally, following acute articular rheumatism. Pus was found in the head, the chest, and the joints. There was no phlebitis. Dr. Watson, in his lectures, relates two cases, in which the autopsic results were strikingly like this, but the constitutional disease was preceded by otorrhea and abscess in the ear. Pyæmia is a very rare and exceptional result of the traumatic lesions above mentioned, and equally or more so of the diseases referred to, viz., acute articular rheumatism and otorrhea. Neither is it one of the natural terminations of endometritis, uterine phlebitis, or suppurative inflammation of the uterine lymphatics, nor is there any reason for believing that these diseases are liable, when not associated with some other morbific element, to produce fatal contamination of the blood. I cannot, therefore, see what bearing the anatomical structure of the uterine sinuses, on which Dr. Clark laid so much stress in his remarks on the first evening in which he discussed this subject, has upon puerperal fever. Even if those cases described by Gooch, Locock, Simpson, and others, as without lesion, were cases of pyæmia, it does not follow that the pyæ-

mia had its source in the inflammation of the inner surface of the uterus. If the more careful and microscopic examination of modern times had been able to reveal the existence of pus in minute quantities in the uterine sinuses, it does not follow that this pus was the source of the fatal contamination of the blood. It must be remembered that these sinuses constitute a special vascular apparatus, pertaining to the utero-placental circulation, and disappearing when complete involution of the uterus has taken place. Admitting, then, the doctrine of purulent contamination as ordinarily received, pus found in these uterine sinuses must have a very trivial influence on the general system as compared with pus found in the crural, the ovaric, or the iliac veins. Furthermore, microscopic investigations have proved, as Trousseau asserted, and Dr. Clark the other evening admitted, that the absorption of pus is a physical impossibility, the pus globules being larger than the calibre of the capillaries. In the cases of absorption and elimination of the pus of large abscesses before alluded to, the pus corpuscles must first be disintegrated and reduced to a fluid condition. The doctrine of putrid infection is equally untenable. If the retention of a certain quantity of liquid or coagulated blood can produce toxæmia and the effects supposed to be due to this, then a natural, constant, and inoffensive condition would be converted into a permanent and formidable danger, for there is no hæmorrhage attending labor which is not followed by putrid infection, as there are always some clots retained and altered in the genital passages. These are briefly my reasons for rejecting the doctrine of purulent contamination as the source of puerperal fever. I do not, however, wish to be understood as asserting that there are no cases of putrid infection which destroy the life of the puerperal woman, for the contrary is my belief. It does sometimes occur from the retention of a portion of the placenta, or of clots which are decomposed within the cavity of the uterus, and in some rare instances from gangrene of the internal surface of the uterus. One case of the latter occurred in my service at Bellevue Hospital. But these cases are quite distinct from puerperal fever, and the differential diagnosis is very easily made out. No one practically familiar with puerperal fever as an epidemic or a sporadic disease, would confound them. In putrid infection the chills are very slight, and recur irregularly and infrequently. The tongue is dry and cracked, the teeth and lips are covered with sordes, the countenance exhibits a peculiarly haggard and frightened expression, and hectic fever and colliquative diarrhœa appear at an early period. There is also usually marked subsultus, insomnia, muttering dilirium, and abdominal meteorism without pain.

The lochial discharge is always extremely offensive. It sometimes is absent, but when this happens, a vaginal examination will give unmistakable proof of the odor of putrescence.

Any or all of the above symptoms may be absent in puerperal fever, and they are never found combined in them entirely. The lochia, for example, is sometimes suppressed suddenly without producing any symptoms, or it may continue unchanged in quality or quantity. It may, to be sure, be very offensive, but this is unattended with the symptoms above enumerated as pertaining to putrid infection.

Puerperal fever, then, is something more and something different from purulent contamination or putrid infection. It is a constitutional disease, primarily acting on the blood. To parody the words of Dr. Meigs, "the constitutional affection leads the train, and brings on the topical lesions after an indispensable preliminary incubation." There is a uniformity and constancy in its symptoms which bears no relation to its local lesions, which are infinitely varied, and in some well-authenticated cases no palpable lesions have been found. If they existed, they were too trivial to explain the severity, and intensity, and rapid progress of the constitutional reaction. Pus is found in the veins, the uterine tissue, the lymphatics, the peritoneum, the pleura, the pericardium, the articulations, the muscles, and the cellular, and even the epidermic tissue. M. Charrier describes one epidemic at the Hôpital Lariboisiere, in which the first half were characterized by the peritoneal lesion, in the second half lesions of the pleura were the uniform rule, and it was rare that lesions were found of any of the organs specially associated with parturition. Each epidemic has its special characteristic as regards the topical lesions. M. Dubois observed one epidemic. in which all who died were found to have perforation of the intestines. M. Danyau, in another epidemic in 1829, found a constant alteration of the mucous membrane of the large intestine in its whole extent, the lesion being a solution of continuity, as if made by a punch. A careful study of the history of the numerous epidemics which have been described, proves that the variety of local lesions predominating in each is exceedingly great, while there has been sufficient uniformity in the symptoms, as a whole, to characterize it as being different manifestations of the same disease.

I now pass to a consideration of the therapeutics of this disease. This is the cardinal end of the study of all diseases. The discussion in the Academy of France has been utterly fruitless as regards this point, as they have added literally nothing to our knowledge of the proper mode of treating puerperal fever. In this respect I think it is not too

much to say, that the discussion in this body contrasts most favorably with that of our foreign namesake. The heroic use of opium and its preparations, in that variety of puerperal fever characterized by the peritoneal lesion, first signalized by Dr. Clark, and the use of the veratrum viride as an arterial sedative, has and will, I do not hesitate to say, diminished the fatality of this terrible disease by a marked per centage.

Most of the French speakers distinctly avow their skepticism as to the value of any treatment for the cure of puerperal fever. The exceptions are M. Depaul, who has found his most favorable results from the free use of mercurials; M. Velpeau, who has strong faith in the value of mercurial inunctions; and M. Beau, who is enthusiastic in his encomiums in regard to the value and importance of the sulphate of quinine in the treatment of this disease.

Now it seems to me that each school of the French—those who have advocated the essentiality of the disease, and those who consider the fever as symptomatic of local inflammation—have equally failed in their therapeutic efforts for obvious reasons. The first have apparently been seeking for some specific in puerperal fever, some antidote for the blood poison, which they would use in an analogous way with the use of the hydrated peroxide of iron in poisoning from arsenic, while the other school are vainly seeking some antiphlogistic course which will overwhelm the imflammatory action. Now there are no specific therapeutics for puerperal fever, any more than there is in yellow fever or in typhus fever. The type of the disease varies to an extraordinary degree in different epidemics. Sporadic cases require very different management from epidemic cases, and the constitution of different individuals attacked, and the tolerance of diseases, differs to a still more extraordinary extent. There is no disease which requires such acute discrimination in the adaptation of means to an end, none which requires sounder judgment or more incessant watching to combat every assault which exhausts vital power.

On a former occasion, I very briefly alluded to the principal indications in the treatment of this disease. I propose now to examine more in detail the agencies we have the control of in fulfilling these indications. The first indication is to eliminate from the system as much of the morbid poison as possible, by means of depletion and the other evacuants, as purgatives, emetics, diuretics, etc. I said that unfortunately this indication, owing to the peculiar character of this disease, can rarely be fulfilled, except to a limited degree. The effects of the poison are developed so rapidly, that the patient will not bear the use

of such means, and it is the effects that we are obliged to combat. Within the past year I have twice resorted to venesection in puerperal fever with most satisfactory results. Both patients were young and plethoric, and the toxæmic influence was strikingly evident in producing great cerebral disturbance. I bled for the same reason that I would bleed similar subjects in uremic convulsion. I would here incidentally suggest the inquiry, whether the type of disease is not again becoming more sthenic, or whether there has not been an epidemic tendency to cerebral congestion. Within the past twelve months I have bled thirteen pregnant or parturient women—more in the aggregate than I have bled for the seven years before. I may also add that I believe I have had authentic accounts of the death of twenty-one from this cause in the same period of time. I will add nothing to my former remarks in regard to venesection in puerperal fever.

Purgatives I have rarely used in this disease, for I have regarded tympanites as a contra-indication for their use, and in many cases there has been a remarked tendency to diarrhœa, which sometimes has been difficult to control. In some few cases, where there was evident obstruction of the portal circulation, or there was reason to believe that there was intestinal irritation from previous constipation, I have given an active cathartic of calomel, rhubarb and nux vomica In a later stage of the disease also, when the patient has been supported by a liberal use of beef tea and alcoholic stimulants for some days, there sometimes comes a period when the digestive apparatus refuses to take up what is put in the stomach, a mercurial laxative has had a most happy effect in unloading the portal system, and relieving the congestion of the capillary circulation of the mucous membrane of the alimentary canal, and the patient at once is able to assimilate what is taken into the stomach.

Emetics were at one period regarded as a specific for puerperal fever, but now they are rarely used. In three cases I have decided on their use. The disease was ushered in by recurring chills, nausea and bilious vomiting, with a marked icterode hue of the skin and conjunctiva. The agent selected was the Turpeth mineral in five-grain doses, which acts very promptly without producing prostration. But, on the contrary, in these cases they professed to feel less weakness after vomiting, and the symptoms which induced the selection of an emetic were at once relieved.

The second indication mentioned was to control the vital disturbances resulting from reaction. These are principally vascular excitement and nervous irritation. The value of veratrum viride in reducing vascular

excitement has in this disease been confirmed by many observers in this city, and my own additional experience. It will most surely reduce the quickened pulse of inflammation and irritation. Its use is not incompatible with that of stimulants. Experience has abundantly demonstrated the truth of this apparent paradox. One patient who recovered took, every hour for two days, one ounce of brandy and three to ten drops of the tinc. veratrum viride, the quantity of the latter being determined by the frequency of the pulse, which was never allowed to rise above 80 per minute, although it sometimes fell down to 40. In another case the veratrum viride did not seem to produce any effect on the pulse, which remained steadily above 130, until the condition of the patient was such that I decided to give brandy. After the first ounce was given, it fell to 108; after the second, to 86. Continuing the brandy, the veratrum viride was suspended for a few hours, and the pulse again rose to 130. After this it was curious to note the fact, that if either agent was suspended the pulse would rapidly increase in frequency, while under the combined influence of the two it was kept below 80 per minute. I have little to add to what has already been said on the use of opium in puerperal fever. In all cases it should be given to the extent of entirely subduing the pain. When the peritoneal lesion predominates, it is the principal agent on which we must rely, and the quantity in which it is to be administered is only to be determined by the effect which it produces.

Third, to combat the local secondary lesions which may be developed. This indication implies the use of a great variety of means, which will often tax the resources of the medical attendant to the utmost. I have already spoken of the value of opium in the peritoneal lesion. The tympanitis is often the most striking and distressing symptom, and I regret to say that I know of no treatment by which we can always be sure of relieving it. I rely, however, mostly on the use of turpentine, internally and endemically. In some cases I have seen good results from the use of the acetate of lead, and in others I have seen all means fail. In those cases where the secondary lesions are developed in the uterus, its veins, or its lymphatics, I have seen no advantage from leeching or blistering. The exposure of the abdomen to the air more than counterbalances the problematical advantages resulting from the former, while the latter only adds to the nervous irritation already existing. In these cases, the only local treatment I make use of is chlorinated vaginal injections repeated several times a day, and hot linseed meal poultices kept constantly applied over the hypogastrium.

Fourth, to sustain the vital powers of the system. I believe more

patients die from the neglect of this point than from any other error of treatment in this disease. The patient is often sacrificed by a contest between the doctor and the disease, both contributing to exhaust the vital powers. In very many cases remedies are utterly powerless in combating the disease, and the province of the physician is to keep the patient alive until the disease is exhausted. This can only be done by proper nutrition, and the prevention of waste, and the restoration of nerve power by the use of alcoholic stimulants. I will not enlarge upon this point; but I still believe that when a patient with puerperal fever has lived for forty-eight hours, there is a constant encouragement for effort, and that the danger is in a certain sense diminished in proportion to the duration of the disease. I will only allude to two points of practice which seem to me of some importance. The first I have already mentioned—the value of a mercurial laxative when the patient has been supported for some days by the liberal use of beef tea and alcoholic stimulants, until the stomach loses the power of taking care of what is put into it, apparently from obstruction of the circulation and congestion of the capillary circulation of the mucous membrane of the alimentary canal.

There is another class of cases where the stomach seems to give out all at once from another cause, which I will not undertake to explain. Everything is rejected in a few minutes after it is swallowed, with a painful feeling of burning and excoriation. Now, if the condition is not changed the patient will soon die, as she can no longer be sustained. I have in several instances been able to persuade the stomach to resume its functions, by adding to each tablespoonful of beef tea one drop of nitro-muriatic acid, the proportion of the mixture being one part of the nitric and two of the hydrochloric acid. I will no longer ask the attention of the Academy, but will conclude with the expression of the hope that other members will give us the benefit of their clinical experience.

Dr. Gardner then made the following remarks:

Mr. President—In common, I doubt not, with you and the members of the Academy generally, I have listened with great satisfaction to the Professors Smith, Clark, and Barker, in their full and lucid statements respecting the etiology, pathology and therapeutics of puerperal fever; I have read, too, the full resumé of kindred debates upon this same subject at the meetings of our illustrious namesake, the Academy of Medicine at Paris; and I may, perhaps, be pardoned *here*, Mr. President, if I state that I have felt no little access of national pride in instituting a comparison between these debates; for here the anatomical facts and the pathological deductions of Prof. Clark, and also his heroic opium treatment, and the more novel treatment of Prof. Barker with the veratrum viride, have at least added something to the sum of knowledge on these points, given us food for thought, and a stand-point (even if a little boggy and uncertain) from which to start for fresh investigations in a somewhat different direction from that which we have been following. The debates of the French Academy have been truly flat, stale, and unprofitable, without a new point made, unless I include the mention there of the opium and veratrum viride treatments.

Still, Mr. President, it seems to me, that even when so much has been done, more might still be effected, and I venture to intrude my few remarks upon the attention of the Academy, not with the expectation of personally adding to the common fund, but in hopes by drawing attention to another side of the question, to elicit new opinions, perhaps, upon old matters. We have heard but little said of the treatment of puerperal fever, except by new methods. Puerperal fever is no new disease; it dates far back in time, for we have monographs upon this subject dated as early as 1659, by Willis, Hake, and Berger. In 1746 puerperal fever prevailed in Paris, chiefly at Hotel Dieu, where scarcely any recovered from it, as might be supposed by any one who has ever seen the ill-ventilated wards of this renowned hospital. The post-mortem examinations there revealed large amounts of albuminous exudations in the peritoneal cavity, appearing like coagulated milk on the surface of the intestines, with a copious effusion of whey or milk-like serum; wherefore effusion was viewed as a metastasis of milk, and hence it was for a time considered as milk-fever, although a closer attention would have shown that the milk is rarely entirely arrested.

But, as I was proceeding to remark, little has been said in this

Academy respecting the treatment of this disease, except to suggest novel methods of treatment. It cannot be possible that there is nothing good in the prophylaxis and therapeutics in general use for the last two centuries! The results may not have been what is desired, but certainly there must be something good in it all! For my part, I do not believe in the opium treatment or the veratrum viride treatment as treatments, while I am willing to accord to both of these powerful remedies a place in the list of medicaments appropriate to some of the ever-changing symptoms of this, in certain situations, very fatal disease. I see in opium a powerful narcotic, efficient in relieving the intense pain often present, and for this I would administer it till the pain is overcome, even if compelled to exceed the immense doses which Dr. Clark, as well as Dr. McNulty in his paper on opium lately read here, has proved the human constitution is able to safely withstand. I see in both opium and veratrum viride an agent effectual in calming the vascular excitement, but not to cure the *cause* of this excitement, for this is still found to be present when the calming potion is removed. Veratrum viride I am ready to give experimentally, empirically, but not with any idea of its specific qualities, as a curative agent. They both act as palliative to inflammatory symptoms; they serve to remove the *vis a tergo*, to restrain the action of the heart from sending more blood to the already gorged and diseased tissues.

For specific remedies I am compelled to stick to the old treatment, notwithstanding my dissatisfaction with it—my unwillingness to follow a course that will not save *every* patient. I am obliged to hold on to it until something better is offered for my adoption. Calomel is the only reliable sheet anchor that I have found. It is the mercurial only that will defibrinate the blood, when the inflammatory symptoms are the most serious. It is the mercurial alone that is powerful to eliminate the subtle *materies morbi* in those less fearful looking, but more dangerous forms of this disorder where the springs of life are destroyed by secret and hidden disease, traced by Dr. Clark to its lurking places in the obscure ampullæ of the internal uterine sinuses. Theoretically, calomel is the remedy demanded; no medicine acts so efficaciously upon all inflammatory affections of all serous membranes, whether it be of the brain, the lungs, or the peritoneum; no medicine more surely destroys morbific poisons than the mercurial; no treatment is more potent to diminish the abnormal plastic elements of the blood, or to restore the hyperæmic tissues and organs to their proper, healthy condition. Still I do not consider that calomel is a positive agent. As in scarlatina, the invasion of the disease is sometimes

gnalized by such terrific aggravation of every and all symptoms until, that before the system can be brought under the influence of any rm of treatment the patient is lost—so intense occasionally become ie inflammatory symptoms, that the most vigorous treatment will not vercome them; for I have seen women after several days' sickness e, when profusely salivated—a fact denied by some, but which I ave seen, though in but one instance that I can recall with distinctess.

The mercurial treatment, then, is in no wise to be neglected; combining, as may be necessary, opium, or the veratrum viride, to any desired extent, yet remembering that in so doing you are administering o curative agent; that the opium but imitates the treatment of the rgeon, who applies splints to a broken leg, producing quiescence and lieving pain—the puerperal poison is still there, and till that is eliminated, you have only made your patient comfortable, and perhaps but othed her passage to the grave.

But before any action can be expected from mercurials, there is ne and occasion for other treatment. The disease sometimes is parent before or during parturition. In the case of a woman whom delivered by craniotomy, after several days' labor, there was no sublence of the abdomen after the removal of the child, weighing $8\frac{1}{2}$ s.; and the secundines, but it remained tumid, tympanitic, and the oman was finally enumerated as one of the unsuccessful of Dr. ark's cases of treatment by opium; the woman dying of hæmorrhage the sixth day after.

Topical depletion, when severe inflammatory symptoms are present, have great faith in. Forty or sixty leeches upon the abdomen, with chaps a repetition of half that number in from 12 to 48 hours, I ve known beneficial, but I have no faith in general bleedings to y amount, or in the application of ten or twenty leeches. If any nefit is to be derived from them, they must be sufficiently numerons, not to overwhelm the disease, at least to markedly affect it.

I attach more importance to turpentine than to any remedy after omel. What the extent of its therapeutical powers may be I not prepared to fully define. I believe them to be very great, and y little appreciated by the profession. In one case of ruptured rus, I consider the life was saved by application of this agent ne. Whether administered by the mouth with the yolk of an egg ten minim doses every hour, or applied constantly for forty-eight seventy-two hours to the abdomen, or internally and externally

united, I have seen results forcing me to believe in its specific prope
ties.

The secondary affections, the results of pyæmia, are not peculiar t
puerperal fever, and need not be especially considered in this categor

Considering it both desirable and becoming that all who have an
especial interest or experience in this class of diseases should lay the
views before the Academy, I have offered these few remarks.